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(43) **Pub. Date: Feb. 21, 2019**(54) **FLEXIBLE SOLAR ROOFING MODULES**(71) Applicant: **Tesla, Inc.**, Palo Alto, CA (US)(72) Inventors: **Brian Edward Atchley**, Petaluma, CA (US); **Andreas Meisel**, Novato, CA (US); **Daniel Preston Flanigan**, Petaluma, CA (US); **Tyrus Hawkes Hudson**, San Rafael, CA (US)(21) Appl. No.: **15/679,687**(22) Filed: **Aug. 17, 2017****Publication Classification**(51) **Int. Cl.**
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(57)

ABSTRACT

Building integrated photovoltaic (BIPV) systems provide for solar panel arrays that can be aesthetically pleasing to an observer. BIPV systems can be incorporated as part of roof surfaces as built into the structure of the roof, particularly as roofing modules that have photovoltaic elements embedded or incorporated into the body of the module, in distinct tiles-sized areas. The use of modules that replicate the look of individual roofing tiles (or shingles) can lead to a more efficient installation process. Further, modules can include flexible joints between the distinct tiles-sized areas, across which solar cells within the module are electrically connected. The flexibility granted to the modules also makes installation easier, and further improves the fatigue and strain resistance of the overall solar array for its operational life.

